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REMOVAL SUPPORT TEAM 2
EPA CONTRACT EP-W-06-072

RST 2-02-F-2667

TRANSMITTAL MEMO

To: Ángel Rodríguez, On-Scene Coordinator
Caribbean Environmental Protection Branch
U.S. EPA, Region II

From: Smita Sumbaly, Data Reviewer
RST 2, Region II

Subject: Puerto Rico Olefins Asbestos Site
Data Validation Assessment

Date: December 23, 2013

The purpose of this memo is to transmit the following information:

- Data validation results for the following parameters:

Asbestos TEM	90 Samples
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- Matrices and Number of Samples

Wipe	84 Samples
Field/Lot Blanks	6 Samples
- Sampling Dates: December 12 and 13, 2013

The final data assessment narrative and original analytical data package are attached.

cc: RST 2 SPM: Carlos Huertas
RST 2 SITE FILE TDD #: TO-0029-0122
ANALYTICAL TDD #: TO-0029-0133
PCS#: 7133



U.S. ENVIRONMENTAL PROTECTION AGENCY

MEMORANDUM

DATE: December 23, 2013

TO: Ángel Rodríguez, On-Scene Coordinator
U.S. EPA, Region II

FROM: Smita Sumbaly
RST 2 Data Review Team

SUBJECT: QA/QC Compliance Review Summary

As requested quality control and performance measures for the data packages noted have been examined and compared to EPA standards for compliance. Measures for the following general areas were evaluated as applicable:

Data Completeness
Sample Collection, Holding Times, and Preservation
Blank Analysis
Sample Sensitivity
Monthly Report TEM Calibrations

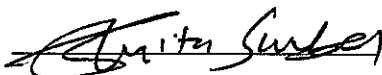
Any statistical measures used to support the following conclusions are attached so that the review may be reviewed by others.

Summary of Results

I
Asbestos
TEM

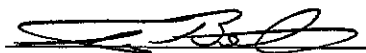
Acceptable as Submitted	<u>X</u>
Acceptable with Comments	<u> </u>
Unacceptable, Action Pending	<u> </u>
Unacceptable	<u> </u>

Data Reviewed by:



Date: 12/23/13

Approved By:



Date: 12/23/13

Area Code/Phone No.:

(732) 585-4410

NARRATIVE

PCS No. 7133

SITE NAME: Puerto Rico Olefins Asbestos Site
PR 385 KM 5.4 Int., 127 Tallaboa Ponente,
Ward Penuelas, Puerto Rico

Laboratory Name: EMSL Analytical, Inc., 200 Route 130 North, Cinnaminson, New Jersey.

INTRODUCTION:

The laboratory's portion of this case consisted of 90 wipe samples including five field blanks and one lot blank sample. All samples were collected on December 12 and 13, 2013. The EMSL Order ID numbers are 041333714, 041333715, 041333716, 041333718, and 041333720.

The laboratory reported No problem(s) with the receipt of these samples.

The laboratory reported problems with the analyses of Asbestos TEM: Due to excessive particulate the analytical sensitivity of 260 structure/square centimeter (str/cm²) as required by the method was not reached for wipe samples.

The evaluator has commented on the criteria specified under each fraction heading. All criteria have been assessed, but no discussion is given where the evaluator has determined that criteria were adequately performed or require no comment. Details relevant to these comments are given on the following forms.

Appropriate Form Is and Chain of Custody have been copied from the original data package and appended to the data assessment narrative for reference.

Title: Evaluation of Asbestos Data
Data Assessment Narrative

RFP #: 272D/Task#: 7133

Site: Puerto Rico Olefins Asbestos Site

Lab: EMSL Analytical, Inc.

Matrix/No. of Samples: Wipe/90

SDG#'s: 041333714, 041333715,
041333716, 041333718, & 041333720

Reviewer: SMITA SUMBALY

Contractor: WESTON-RST 2

A.2.1 Validation Flags-

The following flags have been applied in red by the data validator and must be considered by the data user.

J-

This flag indicates the result qualified as estimated.

Red- Line-

A red-line drawn through a sample result indicates an unusable value. The red-lined data are known to contain significant errors based on documented information and must not be used by the data user.

Fully Usable Data-

The results that do not carry "J" or "red-line" are fully usable.

A.2.2 The data assessment is given below and on the attached sheets.

On December 12 and 13, 2013, U.S. EPA, Region II, RST 2 personnel collected 90 wipe samples, including one lot blank and five field blank samples, from the Puerto Rico Olefins Asbestos Site, located at PR 385 KM 5.4 Int., 127 Tallaboa Ponente, Ward Penuelas, Puerto Rico. On December 13, 2013, all samples were shipped via FedEx to EMSL Analytical, Inc., 200 Route 130 North, Cinnaminson, NJ. The laboratory verified that the samples were received intact and properly custody sealed.

Ninety wipe samples for asbestos were prepared and analyzed in accordance with Standard Test Method ASTM D6480-05 for Wipe Sampling of Surfaces, Indirect Preparation, and Analysis for Asbestos Structure Number Surface Loading by Transmission Electron Microscopy (TEM). Data was reported as asbestos structure/square centimeter with fiber sizing and counting.

TEM analysis was performed using a procedure from TEM ASTM D6480. The sizing of structures (analysis) was performed on either a JEOL 100CX II or JEOL 1200 EX microscope at approximately 19,000X magnification.

All the samples are reported as structure per square centimeter. The target analytical sensitivity for these samples were 260 structure/cm². Due to excessive particulate the analytical sensitivity of 260 structure/cm² as required by the method was not reached. An aspect ratio of >5.1 was applied.

Title: Evaluation of Asbestos Data
Data Assessment Narrative

The laboratory reported the area of samples, asbestos type, asbestos structure, sensitivity, and concentration of asbestos detected. Results are provided in Table 1.

Client identification (ID) and laboratory ID numbers are as follows:

<u>Client ID No.</u>	<u>Laboratory ID No</u>	<u>Matrix</u>	<u>Sampling Date</u>	<u>Analysis</u>
EMSL Order No.:041333714				
FB1-121213	041333714-0001	Wipe	12/12/2013	Asbestos - TEM
LB-121213	041333714-0002	Wipe	12/12/2013	Asbestos - TEM
P0002-CR01-WP01-01	041333714-0003	Wipe	12/12/2013	Asbestos - TEM
P0002-CR01-WP02-01	041333714-0004	Wipe	12/12/2013	Asbestos - TEM
P0002-CR01-WP03-01	041333714-0005	Wipe	12/12/2013	Asbestos - TEM
P0002-CR02-WP01-01	041333714-0006	Wipe	12/12/2013	Asbestos - TEM
P0002-CR02-WP02-01	041333714-0007	Wipe	12/12/2013	Asbestos - TEM
P0002-CR02-WP03-01	041333714-0008	Wipe	12/12/2013	Asbestos - TEM
P0002-CR03-WP01-01	041333714-0009	Wipe	12/12/2013	Asbestos - TEM
P0002-CR03-WP02-01	041333714-0010	Wipe	12/12/2013	Asbestos - TEM
P0002-CR03-WP03-01	041333714-0011	Wipe	12/12/2013	Asbestos - TEM
P0002-CR04-WP01-01	041333714-0012	Wipe	12/12/2013	Asbestos - TEM
P0002-CR04-WP02-01	041333714-0013	Wipe	12/12/2013	Asbestos - TEM
P0002-CR04-WP03-01	041333714-0014	Wipe	12/12/2013	Asbestos - TEM
P0002-CR05-WP01-01	041333714-0015	Wipe	12/13/2013	Asbestos - TEM
P0002-CR05-WP02-01	041333714-0016	Wipe	12/13/2013	Asbestos - TEM
P0002-CR05-WP03-01	041333714-0017	Wipe	12/13/2013	Asbestos - TEM
P0002-CR06-WP01-01	041333714-0018	Wipe	12/12/2013	Asbestos - TEM
P0002-CR06-WP02-01	041333714-0019	Wipe	12/12/2013	Asbestos - TEM
P0002-CR06-WP03-01	041333714-0020	Wipe	12/12/2013	Asbestos - TEM
P0002-CR07-WP01-01	041333714-0021	Wipe	12/13/2013	Asbestos - TEM
P0002-CR07-WP02-01	041333714-0022	Wipe	12/13/2013	Asbestos - TEM
EMSL Order No.:041333716				
FB2-121213	041333716-0001	Wipe	12/12/2013	Asbestos - TEM
P0002-CR07-WP03-01	041333716-0002	Wipe	12/13/2013	Asbestos - TEM
P0002-CR08-WP01-01	041333716-0003	Wipe	12/13/2013	Asbestos - TEM
P0002-CR08-WP02-01	041333716-0004	Wipe	12/13/2013	Asbestos - TEM
P0002-CR08-WP03-01	041333716-0005	Wipe	12/13/2013	Asbestos - TEM
P0002-CR09-WP01-01	041333716-0006	Wipe	12/12/2013	Asbestos - TEM
P0002-CR09-WP02-01	041333716-0007	Wipe	12/12/2013	Asbestos - TEM
P0002-CR09-WP03-01	041333716-0008	Wipe	12/12/2013	Asbestos - TEM
P0002-CR10-WP01-01	041333716-0009	Wipe	12/12/2013	Asbestos - TEM
P0002-CR10-WP02-01	041333716-0010	Wipe	12/12/2013	Asbestos - TEM
P0002-CR10-WP03-01	041333716-0011	Wipe	12/12/2013	Asbestos - TEM
P0002-CR11-WP01-01	041333716-0012	Wipe	12/13/2013	Asbestos - TEM
P0002-CR11-WP02-01	041333716-0013	Wipe	12/13/2013	Asbestos - TEM

Title: Evaluation of Asbestos Data
Data Assessment Narrative

<u>Client ID No.</u>	<u>Laboratory ID No</u>	<u>Matrix</u>	<u>Sampling Date</u>	<u>Analysis</u>
P0002-CR11-WP03-01	041333716-0014	Wipe	12/13/2013	Asbestos - TEM
P0002-CR12-WP01-01	041333716-0015	Wipe	12/12/2013	Asbestos - TEM
P0002-CR12-WP02-01	041333716-0016	Wipe	12/12/2013	Asbestos - TEM
P0002-CR12-WP03-01	041333716-0017	Wipe	12/12/2013	Asbestos - TEM
P0002-CR13-WP01-01	041333716-0018	Wipe	12/12/2013	Asbestos - TEM
P0002-CR13-WP02-01	041333716-0019	Wipe	12/12/2013	Asbestos - TEM
P0002-CR13-WP03-01	041333716-0020	Wipe	12/12/2013	Asbestos - TEM
P0002-CR14-WP01-01	041333716-0021	Wipe	12/12/2013	Asbestos - TEM
. EMSL Order No.:041333715				
FB3-121213	041333715-0001	Wipe	12/12/2013	Asbestos - TEM
P0002-CR14-WP02-01	041333715-0002	Wipe	12/12/2013	Asbestos - TEM
P0002-CR14-WP03-01	041333715-0003	Wipe	12/12/2013	Asbestos - TEM
P0002-CR15-WP01-01	041333715-0004	Wipe	12/12/2013	Asbestos - TEM
P0002-CR15-WP02-01	041333715-0005	Wipe	12/12/2013	Asbestos - TEM
P0002-CR15-WP03-01	041333715-0006	Wipe	12/12/2013	Asbestos - TEM
P0002-CR16-WP01-01	041333715-0007	Wipe	12/12/2013	Asbestos - TEM
P0002-CR16-WP02-01	041333715-0008	Wipe	12/12/2013	Asbestos - TEM
P0002-CR16-WP03-01	041333715-0009	Wipe	12/12/2013	Asbestos - TEM
P0002-CR17-WP01-01	041333715-0010	Wipe	12/12/2013	Asbestos - TEM
P0002-CR17-WP02-01	041333715-0011	Wipe	12/12/2013	Asbestos - TEM
P0002-CR17-WP03-01	041333715-0012	Wipe	12/12/2013	Asbestos - TEM
P0002-CR18-WP01-01	041333715-0013	Wipe	12/13/2013	Asbestos - TEM
P0002-CR18-WP02-01	041333715-0014	Wipe	12/13/2013	Asbestos - TEM
P0002-CR18-WP03-01	041333715-0015	Wipe	12/13/2013	Asbestos - TEM
P0002-CR19-WP01-01	041333715-0016	Wipe	12/12/2013	Asbestos - TEM
P0002-CR19-WP02-01	041333715-0017	Wipe	12/12/2013	Asbestos - TEM
P0002-CR19-WP03-01	041333715-0018	Wipe	12/12/2013	Asbestos - TEM
P0002-CR20-WP01-01	041333715-0019	Wipe	12/12/2013	Asbestos - TEM
P0002-CR20-WP02-01	041333715-0020	Wipe	12/12/2013	Asbestos - TEM
P0002-CR20-WP03-01	041333715-0021	Wipe	12/12/2013	Asbestos - TEM
. EMSL Order No.:041333720				
FB1-121313	041333720-0001	Wipe	12/13/2013	Asbestos - TEM
P0002-CR21-WP01-01	041333720-0002	Wipe	12/12/2013	Asbestos - TEM
P0002-CR21-WP02-01	041333720-0003	Wipe	12/12/2013	Asbestos - TEM
P0002-CR21-WP03-01	041333720-0004	Wipe	12/12/2013	Asbestos - TEM
P0002-CR22-WP01-01	041333720-0005	Wipe	12/12/2013	Asbestos - TEM
P0002-CR22-WP02-01	041333720-0006	Wipe	12/12/2013	Asbestos - TEM
P0002-CR22-WP03-01	041333720-0007	Wipe	12/12/2013	Asbestos - TEM
P0002-CR23-WP01-01	041333720-0008	Wipe	12/12/2013	Asbestos - TEM
P0002-CR23-WP02-01	041333720-0009	Wipe	12/12/2013	Asbestos - TEM
P0002-CR23-WP03-01	041333720-0010	Wipe	12/12/2013	Asbestos - TEM

Title: Evaluation of Asbestos Data
Data Assessment Narrative

<u>Client ID No.</u>	<u>Laboratory ID No</u>	<u>Matr ix</u>	<u>Sampling Date</u>	<u>Analysis</u>
P0002-CR24-WP01-01	041333720-0011	Wipe	12/12/2013	Asbestos - TEM
P0002-CR24-WP02-01	041333720-0012	Wipe	12/12/2013	Asbestos - TEM
P0002-CR24-WP03-01	041333720-0013	Wipe	12/12/2013	Asbestos - TEM
P0002-CR25-WP01-01	041333720-0014	Wipe	12/13/2013	Asbestos - TEM
P0002-CR25-WP02-01	041333720-0015	Wipe	12/13/2013	Asbestos - TEM
P0002-CR25-WP03-01	041333720-0016	Wipe	12/13/2013	Asbestos - TEM
P0002-CR26-WP01-01	041333720-0017	Wipe	12/13/2013	Asbestos - TEM
P0002-CR26-WP02-01	041333720-0018	Wipe	12/13/2013	Asbestos - TEM
P0002-CR26-WP03-01	041333720-0019	Wipe	12/13/2013	Asbestos - TEM
P0002-CR28-WP01-01	041333720-0020	Wipe	12/13/2013	Asbestos - TEM
P0002-CR28-WP02-01	041333720-0021	Wipe	12/13/2013	Asbestos - TEM
EMSL Order No.:041333718				
FB2-121313	041333718-0001	Wipe	12/13/2013	Asbestos - TEM
P0002-CR28-WP03-01	041333718-0002	Wipe	12/13/2013	Asbestos - TEM
P0002-CR29-WP01-01	041333718-0003	Wipe	12/13/2013	Asbestos - TEM
P0002-CR29-WP02-01	041333718-0004	Wipe	12/13/2013	Asbestos - TEM
P0002-CR29-WP03-01	041333718-0005	Wipe	12/13/2013	Asbestos - TEM

Asbestos analysis of Wipe via TEM ASTM Method D6480-05:

Ninety wipe samples were analyzed by ASTM Method D6480-05 for asbestos structure number surface loading by TEM. Data was reported as asbestos structure/square centimeter.

EMSL Order No.:041333714

Twenty-two wipe samples were collected, including one field blank and one lot blank sample. Chrysotile asbestos was detected in all the field samples, except sample no. P0002-CR06-WP02-01. All field samples concentrations were reported between 1940 str/cm² to 48500 str/cm² chrysotile asbestos. Field blank, lot blank samples, and non-detect samples were reported as <2.99 asbestos structures.

Laboratory reported that due to excessive particulate the analytical sensitivity of 260 str/cm² as required by the method was not reached.

For QC purposes, the laboratory analyzed a two lab blanks, daily and monthly report for calibration standards and two inter-analyses. All QC results are acceptable.

EMSL Order No.:041333715

Twenty-one wipe samples were collected, including one field blank sample. Out of 20 field samples, chrysotile asbestos was detected in 12 field samples. Field samples concentrations were reported between 7760 str/cm² to 363000 str/cm² chrysotile asbestos. Field blank and other eight non-detect

Title: Evaluation of Asbestos Data
Data Assessment Narrative

field samples were reported as <2.99 asbestos structures.

Laboratory reported that due to excessive particulate the analytical sensitivity of 260 str/cm² as required by the method was not reached.

For QC purposes, the laboratory analyzed a one lab blank, daily and monthly report for calibration standards, one inter-analyst, and one intra-analyst QC samples. All QC results are acceptable.

EMSL Order No.:041333716

Twenty-one wipe samples were collected, including one field blank sample. Chrysotile asbestos was detected in all the field samples, except sample no. P0002-CR13-WP03-01. All field samples concentrations were reported between 1460 str/cm² to 194000 str/cm² chrysotile asbestos. Field blank and non-detect samples were reported as <2.99 asbestos structures.

Laboratory reported that due to excessive particulate the analytical sensitivity of 260 str/cm² as required by the method was not reached.

For QC purposes, the laboratory analyzed a one lab blanks, daily and monthly report for calibration standards, one intra-analyst, and two inter-analyst QC samples. All QC results are acceptable.

EMSL Order No.:041333720

Twenty-one wipe samples were collected, including one field blank sample. Chrysotile asbestos was detected in eight field samples. Field samples concentrations for eight samples were reported between 2910 str/cm² to 257000 str/cm² chrysotile asbestos. Field blank and other 12 non-detect samples were reported as <2.99 asbestos structures.

Laboratory reported that due to excessive particulate the analytical sensitivity of 260 str/cm² as required by the method was not reached.

For QC purposes, the laboratory analyzed a one lab blanks, daily and monthly report for calibration standards, one intra-analyst, and one inter-analyst QC samples. All QC results are acceptable.

EMSL Order No.:041333718

Five wipe samples were collected, including one field blank sample. Chrysotile asbestos was detected in all four field samples. All field samples concentrations were reported between 1460 str/cm² to 19400 str/cm² chrysotile asbestos. Field blank was reported as <2.99 asbestos structures.

Laboratory reported that due to excessive particulate the analytical sensitivity of 260 str/cm² as required by the method was not reached.

For QC purposes, the laboratory analyzed a one lab blanks, daily and monthly report for calibration standards, one intra-analyst QC samples. All QC results are acceptable.

Title: Evaluation of Asbestos Data
Data Assessment Narrative

TEM Equipment Performance Check

The laboratory performed monthly report for TEM calibrations which includes Chrysotile Beam Dose sensitivity (quarterly), Camera Constant calibrations, Plasma Asher Calibration, Magnification Calibrations, Spot Size Measurements (Quarterly), K Factors (Semi-annually), Detector Resolution (Semi-annually/Quarterly), Significant Na and resolvable Mg-Si Peaks (Quarterly), and daily TEM Calibrations. All calibrations met the "pass" criteria. No qualifiers were applied based upon this parameter.

The results presented for the air samples are acceptable as reported. No qualifications were required.

A.2.3 Contract Problem/Non-Compliance:

None

Contractor Reviewer:


Signature:

12/23/13
Date:

Verified by:


Signature:

12/23/13
Date:

TABLE 1**Project: Puerto Rico Olefins Asbestos Site****Sampling Dates: December 12 and 13, 2013****Standard Test Methods for Wipe Sampling of Surfaces, Indirect Preparation, and Analysis for Asbestos
Structure Number Surface Loading by Transmission Electron Microscopy - D6480-05**

Client Sample ID Number	Laboratory Sample ID Number	Area Sampled (cm ²)	Asbestos Type	Asbestos Structures	Sensitivity (str/cm ²)	Concentration (str/cm ²)
FB1-121213	041333714-0001	NA	None Detected	<2.99	-	-
LB-121213	041333714-0002	NA	None Detected	<2.99	-	-
P0002-CR01-WP01-01	041333714-0003	100	Chrysotile	3	970	2910
P0002-CR01-WP02-01	041333714-0004	100	Chrysotile	19	970	18400
P0002-CR01-WP03-01	041333714-0005	100	Chrysotile	25	1940	48500
P0002-CR02-WP01-01	041333714-0006	100	Chrysotile	11	970	10700
P0002-CR02-WP02-01	041333714-0007	100	Chrysotile	5	970	4850
P0002-CR02-WP03-01	041333714-0008	100	Chrysotile	6	970	5820
P0002-CR03-WP01-01	041333714-0009	100	Chrysotile	<2.99	1940	<5800
P0002-CR03-WP02-01	041333714-0010	100	Chrysotile	<2.99	4850	<14500
P0002-CR03-WP03-01	041333714-0011	100	Chrysotile	20	485	9700
P0002-CR04-WP01-01	041333714-0012	100	Chrysotile	20	485	9700
P0002-CR04-WP02-01	041333714-0013	100	Chrysotile	43	485	20900
P0002-CR04-WP03-01	041333714-0014	100	Chrysotile	10	485	4850
P0002-CR05-WP01-01	041333714-0015	100	Chrysotile	24	970	23300
P0002-CR05-WP02-01	041333714-0016	100	Chrysotile	13	970	12600
P0002-CR05-WP03-01	041333714-0017	100	Chrysotile	30	485	14600
P0002-CR06-WP01-01	041333714-0018	100	Chrysotile	19	485	9220
P0002-CR06-WP02-01	041333714-0019	100	None Detected	<2.99	486	<1450
P0002-CR06-WP03-01	041333714-0020	100	Chrysotile	27	486	13100
P0002-CR07-WP01-01	041333714-0021	100	Chrysotile	27	486	13100
P0002-CR07-WP02-01	041333714-0022	100	Chrysotile	4	486	1940

NA - Not Applicable

str/cm² - Structure/Centimeter Square

TABLE 1**Project: Puerto Rico Olefins Asbestos Site****Sampling Dates: December 12 and 13, 2013****Standard Test Methods for Wipe Sampling of Surfaces, Indirect Preparation, and Analysis for Asbestos
Structure Number Surface Loading by Transmission Electron Microscopy - D6480-05**

Client Sample ID Number	Laboratory Sample ID Number	Area Sampled (cm ²)	Asbestos Type	Asbestos Structures	Sensitivity (str/cm ²)	Concentration (str/cm ²)
FB2-121213	041333716-0001	NA	None Detected	<2.99	-	-
P0002-CR07-WP03-01	041333716-0002	100	Chrysotile	9	485	4370
P0002-CR08-WP01-01	041333716-0003	100	Chrysotile	4	485	1940
P0002-CR08-WP02-01	041333716-0004	100	Chrysotile	6	485	2910
P0002-CR08-WP03-01	041333716-0005	100	Chrysotile	5	485	2430
P0002-CR09-WP01-01	041333716-0006	100	Chrysotile	8	970	7760
P0002-CR09-WP02-01	041333716-0007	100	Chrysotile	7	485	3400
P0002-CR09-WP03-01	041333716-0008	100	Chrysotile	12	485	5820
P0002-CR10-WP01-01	041333716-0009	100	Chrysotile	20	9700	194000
P0002-CR10-WP02-01	041333716-0010	100	Chrysotile	15	9700	146000
P0002-CR10-WP03-01	041333716-0011	100	Chrysotile	22	970	21300
P0002-CR11-WP01-01	041333716-0012	100	Chrysotile	13	485	6310
P0002-CR11-WP02-01	041333716-0013	100	Chrysotile	11	485	5340
P0002-CR11-WP03-01	041333716-0014	100	Chrysotile	8	970	7760
P0002-CR12-WP01-01	041333716-0015	100	Chrysotile	12	485	5820
P0002-CR12-WP02-01	041333716-0016	100	Chrysotile	13	485	6310
P0002-CR12-WP03-01	041333716-0017	100	Chrysotile	13	970	12600
P0002-CR13-WP01-01	041333716-0018	100	Chrysotile	4	485	1940
P0002-CR13-WP02-01	041333716-0019	100	Chrysotile	3	485	1460
P0002-CR13-WP03-01	041333716-0020	100	None Detected	<2.99	485	<1450
P0002-CR14-WP01-01	041333716-0021	100	Chrysotile	13	646	8400

NA - Not Applicable

str/cm² - Structure/Centimeter Square

TABLE 1**Project: Puerto Rico Olefins Asbestos Site****Sampling Dates: December 12 and 13, 2013****Standard Test Methods for Wipe Sampling of Surfaces, Indirect Preparation, and Analysis for Asbestos
Structure Number Surface Loading by Transmission Electron Microscopy - D6480-05**

Client Sample ID Number	Laboratory Sample ID Number	Area Sampled (cm ²)	Asbestos Type	Asbestos Structures	Sensitivity (str/cm ²)	Concentration (str/cm ²)
FB3-121213	041333715-0001	NA	None Detected	<2.99	-	-
P0002-CR14-WP02-01	041333715-0002	100	Chrysotile	4	1940	7760
P0002-CR14-WP03-01	041333715-0003	100	Chrysotile	10	1940	19400
P0002-CR15-WP01-01	041333715-0004	100	Chrysotile	6	1940	11600
P0002-CR15-WP02-01	041333715-0005	100	Chrysotile	8	4860	38900
P0002-CR15-WP03-01	041333715-0006	100	None Detected	<2.99	4850	<14500
P0002-CR16-WP01-01	041333715-0007	100	None Detected	<2.99	9700	<29000
P0002-CR16-WP02-01	041333715-0008	100	None Detected	<2.99	1940	<5800
P0002-CR16-WP03-01	041333715-0009	100	Chrysotile	6	9710	58300
P0002-CR17-WP01-01	041333715-0010	100	Chrysotile	<2.99	4850	<14500
P0002-CR17-WP02-01	041333715-0011	100	None Detected	<2.99	1940	<5800
P0002-CR17-WP03-01	041333715-0012	100	Chrysotile	<2.99	1940	<5800
P0002-CR18-WP01-01	041333715-0013	100	None Detected	<2.99	4850	<14500
P0002-CR18-WP02-01	041333715-0014	100	Chrysotile	4	4850	19400
P0002-CR18-WP03-01	041333715-0015	100	None Detected	<2.99	1940	<5800
P0002-CR19-WP01-01	041333715-0016	100	None Detected	<2.99	1940	<5800
P0002-CR19-WP02-01	041333715-0017	100	Chrysotile	<2.99	1940	<5800
P0002-CR19-WP03-01	041333715-0018	100	Chrysotile	15	24200	363000
P0002-CR20-WP01-01	041333715-0019	100	None Detected	<2.99	1940	<5800
P0002-CR20-WP02-01	041333715-0020	100	Chrysotile	<2.99	1940	<5800
P0002-CR20-WP03-01	041333715-0021	100	Chrysotile	5	1940	9700

NA - Not Applicable

str/cm² - Structure/Centimeter Square

TABLE 1**Project: Puerto Rico Olefins Asbestos Site****Sampling Dates: December 12 and 13, 2013****Standard Test Methods for Wipe Sampling of Surfaces, Indirect Preparation, and Analysis for Asbestos
Structure Number Surface Loading by Transmission Electron Microscopy - D6480-05**

Client Sample ID Number	Laboratory Sample ID Number	Area Sampled (cm ²)	Asbestos Type	Asbestos Structures	Sensitivity (str/cm ²)	Concentration (str/cm ²)
FB1-121313	041333720-0001	NA	None Detected	<2.99	-	-
P0002-CR21-WP01-01	041333720-0002	100	None Detected	<2.99	485	<1450
P0002-CR21-WP02-01	041333720-0003	100	None Detected	<2.99	485	<1450
P0002-CR21-WP03-01	041333720-0004	100	None Detected	<2.99	485	<1450
P0002-CR22-WP01-01	041333720-0005	100	None Detected	<2.99	970	<2900
P0002-CR22-WP02-01	041333720-0006	100	None Detected	<2.99	485	<1450
P0002-CR22-WP03-01	041333720-0007	100	None Detected	<2.99	970	<2900
P0002-CR23-WP01-01	041333720-0008	100	None Detected	<2.99	970	<2900
P0002-CR23-WP02-01	041333720-0009	100	Chrysotile	<2.99	970	<2900
P0002-CR23-WP03-01	041333720-0010	100	Chrysotile	53	4850	257000
P0002-CR24-WP01-01	041333720-0011	100	None Detected	<2.99	485	<1450
P0002-CR24-WP02-01	041333720-0012	100	Chrysotile	8	970	7760
P0002-CR24-WP03-01	041333720-0013	100	Chrysotile	3	970	2910
P0002-CR25-WP01-01	041333720-0014	100	Chrysotile	5	1940	9700
P0002-CR25-WP02-01	041333720-0015	100	Chrysotile	9	1940	17500
P0002-CR25-WP03-01	041333720-0016	100	Chrysotile	4	970	3880
P0002-CR26-WP01-01	041333720-0017	100	Chrysotile	<2.99	485	<1450
P0002-CR26-WP02-01	041333720-0018	100	None Detected	<2.99	485	<1450
P0002-CR26-WP03-01	041333720-0019	100	None Detected	<2.99	485	<1450
P0002-CR28-WP01-01	041333720-0020	100	None Detected	<2.99	485	<1450
P0002-CR28-WP02-01	041333720-0021	100	None Detected	<2.99	485	<1450

NA - Not Applicable

str/cm² - Structure/Centimeter Square

TABLE 1**Project: Puerto Rico Olefins Asbestos Site****Sampling Date: December 13, 2013****Standard Test Methods for Wipe Sampling of Surfaces, Indirect Preparation, and Analysis for Asbestos
Structure Number Surface Loading by Transmission Electron Microscopy - D6480-05**

Client Sample ID Number	Laboratory Sample ID Number	Area Sampled (cm ²)	Asbestos Type	Asbestos Structures	Sensitivity (str/cm ²)	Concentration (str/cm ²)
FB2-121313	041333718-0001	NA	None Detected	<2.99	-	-
P0002-CR28-WP03-01	041333718-0002	100	Chrysotile	10	485	4850
P0002-CR29-WP01-01	041333718-0003	100	Chrysotile	10	1940	19400
P0002-CR29-WP02-01	041333718-0004	100	Chrysotile	8	485	3880
P0002-CR29-WP03-01	041333718-0005	100	Chrysotile	3	485	1460

NA - Not Applicable

str/cm² - Structure/Centimeter Square



EMSL ANALYTICAL, INC.
200 RT. 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 786-0235

December 18, 2013

Smita Sumbaly
Weston Solutions
1090 King Georges Post Road
Suite 201
Edison, NJ 08837
732-585-4400

Re: Narrative TEM ASTM 6480 041333714; RFP #: 272D, Site #:0029-0122

Dear Smita:

On December 14, 2013, EMSL Analytical, Inc. in Cinnaminson, NJ received twenty-two (22) wipe samples via overnight carrier from Weston Solutions for asbestos content analysis via TEM ASTM 6480. The samples were logged in following normal lab procedures. Samples were received under Chain of Custody and in good condition.

TEM ASTM D6480

Samples are prepared by rinsing the sampling wipe and sample bag into a clean 500 mL specimen container. The specimen cup is filled with 400 mL of deionized water and the pH is adjusted to 3-4 with acetic acid. Once the desired pH is achieved the final volume is brought up to 500 mL. Multiple dilutions of each sample are filtered through a 47 mm MCE filtration apparatus. The filter is dried in a petri dish. A portion of the filter is prepared through a direct transfer technique. This technique requires the collapse of a filter wedge onto a microscope slide with hot acetone vapor. The collapsed filter is then etched to remove the top 5% of the filter and a thin layer of carbon deposited on the filter. The carbon coated filter is placed on top of a copper mesh TEM Grid and the filter polymer is wicked away in an acetone bath.

Samples were analyzed by Transmission Electron Microscopy (TEM) via ASTM D6480-05. All data was reported as structures per square centimeter. The target analytical sensitivity for these dust samples was 260 S/cm². Due to excessive particulate the analytical sensitivity of 260 str/cm² as required by the method was not reached. An aspect ratio of $\geq 5:1$ was applied.

Results

All samples associated with this EMSL order ID were analyzed via transmission electron microscopy (TEM) using procedures from TEM ASTM 6480. Analysis was performed on JEOL 100 CX II & JEOL 1200 EX microscopes at approximately 19,000X. Chrysotile was detected in all field samples except for sample P0002-CR06-WP02-01.

Quality Control Performed

The Quality Control (QC) and equipment calibration was performed in compliance with EMSL's Quality Assurance Manual. Two (2) blanks and two (2) inter-analyst QC samples were analyzed. All QC results presented within this package were found to be concordant.



www.emsl.com



EMSL ANALYTICAL, INC.
200 RT. 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 786-0235

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. In addition, I certify, that to the best of my knowledge and belief, the data as reported are true and accurate. Release of the data contained in this data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Robyn Denton

Asbestos Special Projects Manager

EMSL Cinnaminson, NJ



www.emsl.com



2. Tabulated Sample Results

**EMSL Analytical, Inc.**

200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
<http://www.EMSL.com> cinnaslab@EMSL.com

EMSL Order: 041333714
CustomerID: RFW53
CustomerPO: 0084577
ProjectID: RFP 272D

Attn: **Smita Sumbaly**
Weston Solutions (King Georges Post)
1090 King Georges Post Road
Suite 201
Edison, NJ 08837

Phone: (732) 585-4400
Fax:
Received: 12/14/13 11:30 AM
Analysis Date: 12/16/2013
Collected: 12/12/2013

Project: Site #: 0029-0122; RFP #: 272D

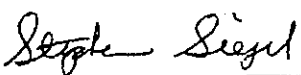
Test Report: Asbestos Analysis of Wipe Samples Using Method ASTM 6480

SAMPLE ID	AREA SAMPLED (cm ²)	ASBESTOS TYPE	ASBESTOS STRUCTURES	Sensitivity (str/cm ²)	CONCENTRATION (str/cm ²)	COMMENTS
FB1-121213 041333714-0001	0	None Detected	<2.99			Blank
LB-121213 041333714-0002	0	None Detected	<2.99			Blank
P0002-CR01- WP01-01 041333714-0003	100	Chrysotile	3	970	2910	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR01- WP02-01 041333714-0004	100	Chrysotile	19	970	18400	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR01- WP03-01 041333714-0005	100	Chrysotile	25	1940	48500	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR02- WP01-01 041333714-0006	100	Chrysotile	11	970	10700	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR02- WP02-01 041333714-0007	100	Chrysotile	5	970	4850	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR02- WP03-01 041333714-0008	100	Chrysotile	6	970	5820	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR03- WP01-01 041333714-0009	100	Chrysotile	<2.99	1940	<5800	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR03- WP02-01 041333714-0010	100	Chrysotile	<2.99	4850	<14500	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.

Analyst(s)

Chris Little (4)
Frank Craig (2)

Peter Harrison (1)
Wayne Froehlich (15)


Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

EMSL maintains liability to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ

Initial report from 12/16/2013 22:20:56

Test Report TEMMicro-7.21.0 Printed: 12/17/2013 10:04:17 AM

**EMSL Analytical, Inc.**

200 Route 130 North, Cinnaminson, NJ 08077

Phone/Fax: (800) 220-3875 / (856) 786-5974

<http://www.EMSL.com>cinngslab@EMSL.com

EMSL Order: 041333714

CustomerID: RFWE53

CustomerPO: 0084577

ProjectID: RFP 272D

Attn: **Smita Sumbaly**
Weston Solutions (King Georges Post)
1090 King Georges Post Road
Suite 201
Edison, NJ 08837

Phone: (732) 585-4400
Fax:
Received: 12/14/13 11:30 AM
Analysis Date: 12/16/2013
Collected: 12/12/2013

Project: Site #: 0029-0122; RFP #: 272D

Test Report: Asbestos Analysis of Wipe Samples Using Method ASTM 6480

SAMPLE ID	AREA SAMPLED (cm ²)	ASBESTOS TYPE	ASBESTOS STRUCTURES	Sensitivity (str/cm ²)	CONCENTRATION (str/cm ²)	COMMENTS
P0002-CR03- WP03-01 041333714-0011	100	Chrysotile	20	485	9700	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR04- WP01-01 041333714-0012	100	Chrysotile	20	485	9700	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR04- WP02-01 041333714-0013	100	Chrysotile	43	485	20900	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR04- WP03-01 041333714-0014	100	Chrysotile	10	485	4850	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR05- WP01-01 041333714-0015	100	Chrysotile	24	970	23300	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR05- WP02-01 041333714-0016	100	Chrysotile	13	970	12600	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR05- WP03-01 041333714-0017	100	Chrysotile	30	485	14600	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR06- WP01-01 041333714-0018	100	Chrysotile	19	485	9220	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR06- WP02-01 041333714-0019	100	None Detected	<2.99	486	<1450	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.

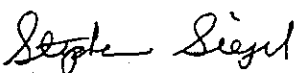
Analyst(s)

Chris Little (4)

Frank Craig (2)

Peter Harrison (1)

Wayne Froehlich (15)


Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

EMSL maintains liability to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ

Initial report from 12/16/2013 22:20:56

Test Report TEMMicro-7.21.0 Printed: 12/17/2013 10:04:17 AM

**EMSL Analytical, Inc.**

200 Route 130 North, Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
<http://www.EMSL.com> cinnaslab@EMSL.com

EMSL Order: 041333714
CustomerID: RFWE53
CustomerPO: 0084577
ProjectID: RFP 272D

Attn: **Smita Sumbaly**
Weston Solutions (King Georges Post)
1090 King Georges Post Road
Suite 201
Edison, NJ 08837

Phone: (732) 585-4400
Fax:
Received: 12/14/13 11:30 AM
Analysis Date: 12/16/2013
Collected: 12/12/2013

Project: Site #: 0029-0122; RFP #: 272D

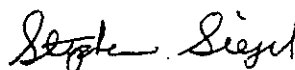
Test Report: Asbestos Analysis of Wipe Samples Using Method ASTM 6480

SAMPLE ID	AREA SAMPLED (cm ²)	ASBESTOS TYPE	ASBESTOS STRUCTURES	Sensitivity (str/cm ²)	CONCENTRATION (str/cm ²)	COMMENTS
P0002-CR06- WP03-01 041333714-0020	100	Chrysotile	27	486	13100	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR07- WP01-01 041333714-0021	100	Chrysotile	27	486	13100	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR07- WP02-01 041333714-0022	100	Chrysotile	4	486	1940	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.

Analyst(s)

Chris Little (4)
Frank Craig (2)

Peter Harrison (1)
Wayne Froehlich (15)


Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ

Initial report from 12/16/2013 22:20:56

Test Report TEMMicro-7.21.0 Printed: 12/17/2013 10:04:17 AM

THIS IS THE LAST PAGE OF THE REPORT.

3

Lab Phone: 858-303-2538

USEPA

DateShipped: 12/13/2013

REF# 272D

PO# 0084577

CHAIN OF CUSTODY RECORD

Site #: 0029 - 0122

Contact Name: Joel Petty

Contact Phone: 732-570-4943

No: 2-121213-105237-0004

Cooler #: 1

Lab: EMSL

Lab Phone: 858-303-2538

04/333714

[illegible]

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSolutions.com

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all maps	Jed Vetter RST2	12/13/10 1500			



December 20, 2013

Smita Sumbaly
Weston Solutions
1090 King Georges Post Road
Suite 201
Edison, NJ 08837
732-585-4400

Re: Narrative TEM ASTM 6480 041333716; RFP #: 272D, Site #:0029-0122

Dear Smita:

On December 14, 2013, EMSL Analytical, Inc. in Cinnaminson, NJ received twenty-one (21) wipe samples via overnight carrier from Weston Solutions for asbestos content analysis via TEM ASTM 6480. The samples were logged in following normal lab procedures. Samples were received under Chain of Custody and in good condition.

TEM ASTM D6480

Samples are prepared by rinsing the sampling wipe and sample bag into a clean 500 mL specimen container. The specimen cup is filled with 400 mL of deionized water and the pH is adjusted to 3-4 with acetic acid. Once the desired pH is achieved the final volume is brought up to 500 mL. Multiple dilutions of each sample are filtered through a 47 mm MCE filtration apparatus. The filter is dried in a petri dish. A portion of the filter is prepared through a direct transfer technique. This technique requires the collapse of a filter wedge onto a microscope slide with hot acetone vapor. The collapsed filter is then etched to remove the top 5% of the filter and a thin layer of carbon deposited on the filter. The carbon coated filter is placed on top of a copper mesh TEM Grid and the filter polymer is wicked away in an acetone bath.

Samples were analyzed by Transmission Electron Microscopy (TEM) via ASTM D6480-05. All data was reported as structures per square centimeter. The target analytical sensitivity for these dust samples was 260 S/cm². Due to excessive particulate the analytical sensitivity of 260 str/cm² as required by the method was not reached. An aspect ratio of $\geq 5:1$ was applied.

Results

All samples associated with this EMSL order ID were analyzed via transmission electron microscopy (TEM) using procedures from TEM ASTM 6480. Analysis was performed on JEOL 100 CX II & JEOL 1200 EX microscopes at approximately 19,000X. Chrysotile was detected in all field samples with the exception of P0002-CR13-WP03-01.

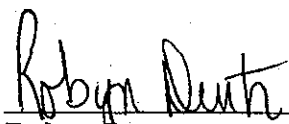


EMSL

Quality Control Performed

The Quality Control (QC) and equipment calibration was performed in compliance with EMSL's Quality Assurance Manual. One (1) blank, one (1) intra-analyst, and one (1) inter-analyst QC samples were analyzed. All QC results presented within this package were found to be concordant.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. In addition, I certify, that to the best of my knowledge and belief, the data as reported are true and accurate. Release of the data contained in this data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.



Robyn Denton
Asbestos Special Projects Manager
EMSL Cinnaminson, NJ



2. Tabulated Sample Results

**EMSL Analytical, Inc.**

200 Route 130 North, Cinnaminson, NJ 08077

Phone/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com>cinnaslab@EMSL.com

EMSL Order: 041333716

CustomerID: RFWE53

CustomerPO: 0084577

ProjectID: RFP 272D

Attn: **Smita Sumbaly**
Weston Solutions (King Georges Post)
1090 King Georges Post Road
Suite 201
Edison, NJ 08837

Phone: (732) 585-4400
 Fax:
 Received: 12/14/13 11:30 AM
 Analysis Date: 12/18/2013
 Collected: 12/12/2013

Project: Site #: 0029-0122, RFP #: 272D

Test Report: Asbestos Analysis of Wipe Samples Using Method ASTM 6480

SAMPLE ID	AREA SAMPLED (cm ²)	ASBESTOS TYPE	ASBESTOS STRUCTURES	Sensitivity (str/cm ²)	CONCENTRATION (str/cm ²)	COMMENTS
FB2-121213 041333716-0001		None Detected	<2.99			Blank
P0002-CR07- WP03-01 041333716-0002	100	Chrysotile	9	485	4370	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR08- WP01-01 041333716-0003	100	Chrysotile	4	485	1940	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR08- WP02-01 041333716-0004	100	Chrysotile	6	485	2910	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR08- WP03-01 041333716-0005	100	Chrysotile	5	485	2430	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR09- WP01-01 041333716-0006	100	Chrysotile	8	970	7760	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR09- WP02-01 041333716-0007	100	Chrysotile	7	485	3400	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR09- WP03-01 041333716-0008	100	Chrysotile	12	485	5820	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR10- WP01-01 041333716-0009	100	Chrysotile	20	9700	194000	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR10- WP02-01 041333716-0010	100	Chrysotile	15	9700	146000	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.

Analyst(s)

Debbie Little (1)

Wayne Froehlich (17)

Ted Young (3)

Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

EMSL maintains liability to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ

Initial report from 12/19/2013 08:30:19

Test Report TEMMicro-7.21.0 Printed: 12/19/2013 8:35:53 AM

**EMSL Analytical, Inc.**

200 Route 130 North, Cinnaminson, NJ 08077

Phone/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com>cinnaslab@EMSL.com

EMSL Order: 041333716
CustomerID: RFWE53
CustomerPO: 0084577
ProjectID: RFP 272D

Attn: **Smita Sumbaly**
Weston Solutions (King Georges Post)
1090 King Georges Post Road
Suite 201
Edison, NJ 08837

Phone: (732) 585-4400
Fax:
Received: 12/14/13 11:30 AM
Analysis Date: 12/18/2013
Collected: 12/12/2013

Project: Site #: 0029-0122, RFP #: 272D

Test Report: Asbestos Analysis of Wipe Samples Using Method ASTM 6480

SAMPLE ID	AREA SAMPLED (cm ²)	ASBESTOS TYPE	ASBESTOS STRUCTURES	Sensitivity (str/cm ²)	CONCENTRATION (str/cm ²)	COMMENTS
P0002-CR10- WP03-01 041333716-0011	100	Chrysotile	22	970	21300	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR11- WP01-01 041333716-0012	100	Chrysotile	13	485	6310	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR11- WP02-01 041333716-0013	100	Chrysotile	11	485	5340	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR11- WP03-01 041333716-0014	100	Chrysotile	8	970	7760	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR12- WP01-01 041333716-0015	100	Chrysotile	12	485	5820	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR12- WP02-01 041333716-0016	100	Chrysotile	13	485	6310	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR12- WP03-01 041333716-0017	100	Chrysotile	13	970	12600	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR13- WP01-01 041333716-0018	100	Chrysotile	4	485	1940	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR13- WP02-01 041333716-0019	100	Chrysotile	3	485	1460	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.

Analyst(s)

Debbie Little (1)
Ted Young (3)

Wayne Froehlich (17)

Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

EMSL maintains liability to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ

initial report from 12/19/2013 08:30:19

Test Report TEMMicro-7.21.0 Printed: 12/19/2013 8:35:53 AM

**EMSL Analytical, Inc.**

200 Route 130 North, Cinnaminson, NJ 08077

Phone/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com>cinnaslab@EMSL.com

EMSL Order:	041333716
CustomerID:	RFWE53
CustomerPO:	0084577
ProjectID:	RFP 272D

Attn: **Smita Sumbaly**
Weston Solutions (King Georges Post)
1090 King Georges Post Road
Suite 201
Edison, NJ 08837

Phone: (732) 585-4400
Fax:
Received: 12/14/13 11:30 AM
Analysis Date: 12/18/2013
Collected: 12/12/2013

Project: Site #: 0029-0122, RFP #: 272D

Test Report: Asbestos Analysis of Wipe Samples Using Method ASTM 6480

SAMPLE ID	AREA SAMPLED (cm ²)	ASBESTOS TYPE	ASBESTOS STRUCTURES	Sensitivity (str/cm ²)	CONCENTRATION (str/cm ²)	COMMENTS
P0002-CR13- WP03-01 041333716-0020	100	None Detected	<2.99	485	<1450	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR14- WP01-01 041333716-0021	100	Chrysotile	13	646	8400	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.

Analyst(s)

Debbie Little (1)

Wayne Froehlich (17)

Ted Young (3)

Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

EMSL maintains liability to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ

Initial report from 12/19/2013 08:30:19

Test Report TEMMicro-7.21.0 Printed: 12/19/2013 8:35:53 AM

THIS IS THE LAST PAGE OF THE REPORT.

3

USEPA

Date Shipped: 12/13/2013

RFP# 272D

PO# 0084577

CHAIN OF CUSTODY RECORD

Site #: 0029 - 0122

Contact Name: Joel Petty

Contact Phone: 732-570-4943

No: 2-121313-112124-0005

Cooler #: 1

Lab: EMSL

Lab Phone: 858-303-2538

041333716

Lab #	Sample #	Analyses	Matrix	Collecti on Method	Collected	Sample Time	Numb Cont	Container	Preservati ve	Area Width	Area Length	Vol Units	Lab QC
	FB2-121213	Asbestos TEM	Wipe	Grab	12/12/2013	15:00	1	Plastic Bag	None	0	0	cm	N
	P0002-CR07-WP03-01	Asbestos TEM	Wipe	Grab	12/13/2013	08:54	1	Plastic Bag	None	10	10	cm	N
	P0002-CR08-WP01-01	Asbestos TEM	Wipe	Grab	12/13/2013	08:58	1	Plastic Bag	None	10	10	cm	N
	P0002-CR08-WP02-01	Asbestos TEM	Wipe	Grab	12/13/2013	08:59	1	Plastic Bag	None	10	10	cm	N
	P0002-CR08-WP03-01	Asbestos TEM	Wipe	Grab	12/13/2013	08:59	1	Plastic Bag	None	10	10	cm	N
	P0002-CR09-WP01-01	Asbestos TEM	Wipe	Grab	12/12/2013	14:07	1	Plastic Bag	None	10	10	cm	N
	P0002-CR09-WP02-01	Asbestos TEM	Wipe	Grab	12/12/2013	14:09	1	Plastic Bag	None	10	10	cm	N
	P0002-CR09-WP03-01	Asbestos TEM	Wipe	Grab	12/12/2013	14:12	1	Plastic Bag	None	10	10	cm	N
	P0002-CR10-WP01-01	Asbestos TEM	Wipe	Grab	12/12/2013	14:21	1	Plastic Bag	None	10	10	cm	N
	P0002-CR10-WP02-01	Asbestos TEM	Wipe	Grab	12/12/2013	14:23	1	Plastic Bag	None	10	10	cm	N
	P0002-CR10-WP03-01	Asbestos TEM	Wipe	Grab	12/12/2013	14:24	1	Plastic Bag	None	10	10	cm	N
	P0002-CR11-WP01-01	Asbestos TEM	Wipe	Grab	12/13/2013	08:12	1	Plastic Bag	None	10	10	cm	N
	P0002-CR11-WP02-01	Asbestos TEM	Wipe	Grab	12/13/2013	08:13	1	Plastic Bag	None	10	10	cm	N
	P0002-CR11-WP03-01	Asbestos TEM	Wipe	Grab	12/13/2013	08:14	1	Plastic Bag	None	10	10	cm	N
	P0002-CR12-WP01-01	Asbestos TEM	Wipe	Grab	12/12/2013	14:26	1	Plastic Bag	None	10	10	cm	N
	P0002-CR12-WP02-01	Asbestos TEM	Wipe	Grab	12/12/2013	14:28	1	Plastic Bag	None	10	10	cm	N
	P0002-CR12-WP03-01	Asbestos TEM	Wipe	Grab	12/12/2013	14:29	1	Plastic Bag	None	10	10	cm	N
	P0002-CR13-WP01-01	Asbestos TEM	Wipe	Grab	12/12/2013	14:33	1	Plastic Bag	None	10	10	cm	N

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com.

Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSolutions.com

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
<i>all samples all analyses</i>	<i>Joel Petty RST2</i>	12/13/13 1500			
			<i>DWB-EX-1130A</i>	12.14.13	

(21)

USEPA

Date Shipped: 12/13/2013
RFP# 272D
PO# 0084577

CHAIN OF CUSTODY RECORD

Site #: 0029 - 0122

Contact Name: Joel Petty

Contact Phone: 732-570-4943

No: 2-121313-112124-0005

Cooler #: 1

Lab: EMSL

Lab Phone: 858-303-2538

041333716

[illegible]

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petry@WestonSolutions.com, and S.Sumbaly@WestonSolutions.com

[illegible]



EMSL ANALYTICAL, INC.
200 RT. 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 786-0235

December 18, 2013

Smita Sumbaly
Weston Solutions
1090 King Georges Post Road
Suite 201
Edison, NJ 08837
732-585-4400

Re: Narrative TEM ASTM 6480 041333715; RFP #: 272D, Site #:0029-0122

Dear Smita:

On December 14, 2013, EMSL Analytical, Inc. in Cinnaminson, NJ received twenty-one (21) wipe samples via overnight carrier from Weston Solutions for asbestos content analysis via TEM ASTM 6480. The samples were logged in following normal lab procedures. Samples were received under Chain of Custody and in good condition.

TEM ASTM D6480

Samples are prepared by rinsing the sampling wipe and sample bag into a clean 500 mL specimen container. The specimen cup is filled with 400 mL of deionized water and the pH is adjusted to 3-4 with acetic acid. Once the desired pH is achieved the final volume is brought up to 500 mL. Multiple dilutions of each sample are filtered through a 47 mm MCE filtration apparatus. The filter is dried in a petri dish. A portion of the filter is prepared through a direct transfer technique. This technique requires the collapse of a filter wedge onto a microscope slide with hot acetone vapor. The collapsed filter is then etched to remove the top 5% of the filter and a thin layer of carbon deposited on the filter. The carbon coated filter is placed on top of a copper mesh TEM Grid and the filter polymer is wicked away in an acetone bath.

Samples were analyzed by Transmission Electron Microscopy (TEM) via ASTM D6480-05. All data was reported as structures per square centimeter. The target analytical sensitivity for these dust samples was 260 S/cm². Due to excessive particulate the analytical sensitivity of 260 str/cm² as required by the method was not reached. An aspect ratio of $\geq 5:1$ was applied.

Results

All samples associated with this EMSL order ID were analyzed via transmission electron microscopy (TEM) using procedures from TEM ASTM 6480. Analysis was performed on JEOL 100 CX II & JEOL 1200 EX microscopes at approximately 19,000X. Chrysotile was detected samples P0002-CR14-WP02-01, P0002-CR14-WP03-01, P0002-CR15-WP01-01, P0002-CR15-WP02-01, P0002-CR16-WP03-01, P0002-CR17-WP01-01, P0002-CR17-WP03-01, P0002-CR18-WP02-01, P0002-CR19-WP02-01, P0002-CR19-WP03-01, P0002-CR20-WP02-01, P0002-CR20-WP03-01.



www.emsl.com



EMSL ANALYTICAL, INC.
200 RT. 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 786-0235

Quality Control Performed

The Quality Control (QC) and equipment calibration was performed in compliance with EMSL's Quality Assurance Manual. One (1) blank, one (1) intra-analyst, and two (2) inter-analyst QC samples were analyzed. All QC results presented within this package were found to be concordant.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. In addition, I certify, that to the best of my knowledge and belief, the data as reported are true and accurate. Release of the data contained in this data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Robyn Denton
Asbestos Special Projects Manager
EMSL Cinnaminson, NJ





2. Tabulated Sample Results

**EMSL Analytical, Inc.**

200 Route 130 North, Cinnaminson, NJ 08077

Phone/Fax: (800) 220-3875 / (856) 786-5974

<http://www.EMSL.com>cinnaslab@EMSL.com

EMSL Order: 041333715

CustomerID: RFWE53

CustomerPO: 0084577

ProjectID: RFP 272D

Attn: **Smita Sumbaly**
Weston Solutions (King Georges Post)
1090 King Georges Post Road
Suite 201
Edison, NJ 08837

Phone: (732) 585-4400

Fax:

Received: 12/14/13 11:30 AM

Analysis Date: 12/17/2013

Collected: 12/12/2013

Project: Site #: 0029-0122, RFP #: 272D

Test Report: Asbestos Analysis of Wipe Samples Using Method ASTM 6480

SAMPLE ID	AREA SAMPLED (cm ²)	ASBESTOS TYPE	ASBESTOS STRUCTURES	Sensitivity (str/cm ²)	CONCENTRATION (str/cm ²)	COMMENTS
FB3-121213 041333715-0001		None Detected	<2.99			Blank
P0002-CR14- WP02-01 041333715-0002	100	Chrysotile	4	1940	7760	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR14- WP03-01 041333715-0003	100	Chrysotile	10	1940	19400	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR15- WP01-01 041333715-0004	100	Chrysotile	6	1940	11600	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR15- WP02-01 041333715-0005	100	Chrysotile	8	4860	38900	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR15- WP03-01 041333715-0006	100	None Detected	<2.99	4850	<14500	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR16- WP01-01 041333715-0007	100	None Detected	<2.99	9700	<29000	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR16- WP02-01 041333715-0008	100	None Detected	<2.99	1940	<5800	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR16- WP03-01 041333715-0009	100	Chrysotile	6	9710	58300	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR17- WP01-01 041333715-0010	100	Chrysotile	<2.99	4850	<14500	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.

Analyst(s)

Chris Little (7)

Ted Young (12)

Wayne Froehlich (2)

Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

EMSL maintains liability to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ

Initial report from 12/17/2013 13:54:34

Test Report TEMMicro-7.21.0 Printed: 12/17/2013 2:29:42 PM

**EMSL Analytical, Inc.**

200 Route 130 North, Cinnaminson, NJ 08077

Phone/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com>cinnaslab@EMSL.com

EMSL Order: 041333715

CustomerID: RFWE53

CustomerPO: 0084577

ProjectID: RFP 272D

Attn: **Smita Sumbaly**
Weston Solutions (King Georges Post)
1090 King Georges Post Road
Suite 201
Edison, NJ 08837

Phone: (732) 585-4400
Fax:
Received: 12/14/13 11:30 AM
Analysis Date: 12/17/2013
Collected: 12/12/2013

Project: Site #: 0029-0122, RFP #: 272D

Test Report: Asbestos Analysis of Wipe Samples Using Method ASTM 6480

SAMPLE ID	AREA SAMPLED (cm ²)	ASBESTOS TYPE	ASBESTOS STRUCTURES	Sensitivity (str/cm ²)	CONCENTRATION (str/cm ²)	COMMENTS
P0002-CR17- WP02-01 041333715-0011	100	None Detected	<2.99	1940	<5800	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR17- WP03-01 041333715-0012	100	Chrysotile	<2.99	1940	<5800	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR18- WP01-01 041333715-0013	100	None Detected	<2.99	4850	<14500	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR18- WP02-01 041333715-0014	100	Chrysotile	4	4850	19400	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR18- WP03-01 041333715-0015	100	None Detected	<2.99	1940	<5800	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR19- WP01-01 041333715-0016	100	None Detected	<2.99	1940	<5800	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR19- WP02-01 041333715-0017	100	Chrysotile	<2.99	1940	<5800	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR19- WP03-01 041333715-0018	100	Chrysotile	15	24200	363000	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR20- WP01-01 041333715-0019	100	None Detected	<2.99	1940	<5800	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.

Analyst(s)

Chris Little (7)

Ted Young (12)

Wayne Froehlich (2)

Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ

Initial report from 12/17/2013 13:54:34

Test Report TEMMicro-7.21.0 Printed: 12/17/2013 2:29:42 PM

**EMSL Analytical, Inc.**

200 Route 130 North, Cinnaminson, NJ 08077

Phone/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com>cinnasblab@EMSL.com

EMSL Order: 041333715

CustomerID: RFE53

CustomerPO: 0084577

ProjectID: RFP 272D

Attn: **Smita Sumbaly**
Weston Solutions (King Georges Post)
1090 King Georges Post Road
Suite 201
Edison, NJ 08837

Phone: (732) 585-4400

Fax:

Received: 12/14/13 11:30 AM

Analysis Date: 12/17/2013

Collected: 12/12/2013

Project: Site #: 0029-0122, RFP #: 272D

Test Report: Asbestos Analysis of Wipe Samples Using Method ASTM 6480

SAMPLE ID	AREA SAMPLED (cm ²)	ASBESTOS TYPE	ASBESTOS STRUCTURES	Sensitivity (str/cm ²)	CONCENTRATION (str/cm ²)	COMMENTS
P0002-CR20- WP02-01 041333715-0020	100	Chrysotile	<2.99	1940	<5800	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR20- WP03-01 041333715-0021	100	Chrysotile	5	1940	9700	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.

Analyst(s)

Chris Little (7)

Ted Young (12)

Wayne Froehlich (2)

Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

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Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ

Initial report from 12/17/2013 13:54:34

Test Report TEMMicro-7.21.0 Printed: 12/17/2013 2:29:42 PM

THIS IS THE LAST PAGE OF THE REPORT.

3

USEPA

DateShipped: 12/13/2013
RFP# 272D
PO# 0084577

CHAIN OF CUSTODY RECORD

Site #: 0029 - 0122
Contact Name: Joel Petty
Contact Phone: 732-570-4944

No: 2-121313-112316-0006

Cooler #: 1
Lab: EMSL
Lab Phone: 858-303-2538

04/333715

Lab #	Sample #	Analyses	Matrix	Collection Method	Collected	Sample Time	Numb Cont	Container	Preservative	Area Width	Area Length	Vol Units	Lab QC
	FB3-121213	Asbestos TEM	Wipe	Grab	12/12/2013	16:00	1	Plastic Bag	Nona	0	0	cm	N
	P0002-CR14-WP02-01	Asbestos TEM	Wipe	Grab	12/12/2013	14:38	1	Plastic Bag	None	10	10	cm	N
	P0002-CR14-WP03-01	Asbestos TEM	Wipe	Grab	12/12/2013	14:39	1	Plastic Bag	None	10	10	cm	N
	P0002-CR15-WP01-01	Asbestos TEM	Wipe	Grab	12/12/2013	14:42	1	Plastic Bag	Nona	10	10	cm	N
	P0002-CR15-WP02-01	Asbestos TEM	Wipe	Grab	12/12/2013	14:43	1	Plastic Bag	None	10	10	cm	N
	P0002-CR15-WP03-01	Asbestos TEM	Wipe	Grab	12/12/2013	14:44	1	Plastic Bag	None	10	10	cm	N
	P0002-CR16-WP01-01	Asbestos TEM	Wipe	Grab	12/12/2013	15:08	1	Plastic Bag	Nona	10	10	cm	N
	P0002-CR16-WP02-01	Asbestos TEM	Wipe	Grab	12/12/2013	15:09	1	Plastic Bag	None	10	10	cm	N
	P0002-CR16-WP03-01	Asbestos TEM	Wipe	Grab	12/12/2013	15:10	1	Plastic Bag	None	10	10	cm	N
	P0002-CR17-WP01-01	Asbestos TEM	Wipe	Grab	12/12/2013	15:15	1	Plastic Bag	Nona	10	10	cm	N
	P0002-CR17-WP02-01	Asbestos TEM	Wipe	Grab	12/12/2013	15:16	1	Plastic Bag	None	10	10	cm	N
	P0002-CR17-WP03-01	Asbestos TEM	Wipe	Grab	12/12/2013	15:17	1	Plastic Bag	None	10	10	cm	N
	P0002-CR18-WP01-01	Asbestos TEM	Wipe	Grab	12/13/2013	08:23	1	Plastic Bag	Nona	10	10	cm	N
	P0002-CR18-WP02-01	Asbestos TEM	Wipe	Grab	12/13/2013	08:24	1	Plastic Bag	None	10	10	cm	N
	P0002-CR18-WP03-01	Asbestos TEM	Wipe	Grab	12/13/2013	08:25	1	Plastic Bag	None	10	10	cm	N
	P0002-CR19-WP01-01	Asbestos TEM	Wipe	Grab	12/12/2013	15:21	1	Plastic Bag	None	10	10	cm	N
	P0002-CR19-WP02-01	Asbestos TEM	Wipe	Grab	12/12/2013	15:22	1	Plastic Bag	None	10	10	cm	N
	P0002-CR19-WP03-01	Asbestos TEM	Wipe	Grab	12/12/2013	15:23	1	Plastic Bag	None	10	10	cm	N

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSolutions.com

<p>Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSolutions.com</p>	<p>SAMPLES TRANSFERRED FROM</p>	<p>DEC 11</p>	<p>CHAIN OF CUSTODY #</p>	<p>CM INAMIN</p>
---	---------------------------------	---------------	---------------------------	----------------------

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analytes	Jed Peltz RSTZ	12/13/13 1500			see back of box
					W
			DWB-7-1130A	12.14.13	

①

CHAIN OF CUSTODY RECORD

No: 2-121313-112316-0006

Site #: 0029 - 0122

Cooler #: 1

Contact Name: Joel Petty

Lab: EMSL

Contact Phone: 732-570-4943

Lab Phone: 858-303-2538

REC'D
EMS
CINNAMINS
2013 DEC 14

Special Instructions: 24 Hour TAT Preliminary Data, Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSolutions.com

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analyses	Joe P. Kelly RST2	12/13/13 1500			...

December 20, 2013

Smita Sumbaly
Weston Solutions
1090 King Georges Post Road
Suite 201
Edison, NJ 08837
732-585-4400

Re: Narrative TEM ASTM 6480 041333720; RFP #: 272D, Site #:0029-0122

Dear Smita:

On December 14, 2013, EMSL Analytical, Inc. in Cinnaminson, NJ received twenty-one (21) wipe samples via overnight carrier from Weston Solutions for asbestos content analysis via TEM ASTM 6480. The samples were logged in following normal lab procedures. Samples were received under Chain of Custody and in good condition.

TEM ASTM D6480

Samples are prepared by rinsing the sampling wipe and sample bag into a clean 500 mL specimen container. The specimen cup is filled with 400 mL of deionized water and the pH is adjusted to 3-4 with acetic acid. Once the desired pH is achieved the final volume is brought up to 500 mL. Multiple dilutions of each sample are filtered through a 47 mm MCE filtration apparatus. The filter is dried in a petri dish. A portion of the filter is prepared through a direct transfer technique. This technique requires the collapse of a filter wedge onto a microscope slide with hot acetone vapor. The collapsed filter is then etched to remove the top 5% of the filter and a thin layer of carbon deposited on the filter. The carbon coated filter is placed on top of a copper mesh TEM Grid and the filter polymer is wicked away in an acetone bath.

Samples were analyzed by Transmission Electron Microscopy (TEM) via ASTM D6480-05. All data was reported as structures per square centimeter. The target analytical sensitivity for these dust samples was 260 S/cm². Due to excessive particulate the analytical sensitivity of 260 str/cm² as required by the method was not reached. An aspect ratio of $\geq 5:1$ was applied.

Results

All samples associated with this EMSL order ID were analyzed via transmission electron microscopy (TEM) using procedures from TEM ASTM 6480. Analysis was performed on JEOL 100 CX II & JEOL 1200 EX microscopes at approximately 19,000X. Chrysotile was detected in samples P0002-CR23-WP02-01, P0002-CR23-WP03-01, P0002-CR24-WP02-01, P0002-CR24-WP03-01, P0002-CR25-WP01-01, P0002-CR25-WP02-01, P0002-CR25-WP03-01, and P0002-CR26-WP01-01.

Quality Control Performed

The Quality Control (QC) and equipment calibration was performed in compliance with EMSL's Quality Assurance Manual. One (1) blank, one (1) intra-analyst, and one (1) inter-analyst QC samples were analyzed. All QC results presented within this package were found to be concordant.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. In addition, I certify, that to the best of my knowledge and belief, the data as reported are true and accurate. Release of the data contained in this data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.



Robyn Denton
Asbestos Special Projects Manager
EMSL Cinnaminson, NJ



2. Tabulated Sample Results

**EMSL Analytical, Inc.**

200 Route 130 North, Cinnaminson, NJ 08077

Phone/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com>cinnaslab@EMSL.com

EMSL Order: 041333720

CustomerID: RFWE53

CustomerPO: 0084577

ProjectID: RFP 272D

Attn: **Smita Sumbaly**
Weston Solutions (King Georges Post)
1090 King Georges Post Road
Suite 201
Edison, NJ 08837

Phone: (732) 585-4400
Fax:
Received: 12/14/13 11:30 AM
Analysis Date: 12/18/2013
Collected: 12/13/2013

Project: Site #: 0029-0122, RFP #: 272D

Test Report: Asbestos Analysis of Wipe Samples Using Method ASTM 6480

SAMPLE ID	AREA SAMPLED (cm ²)	ASBESTOS TYPE	ASBESTOS STRUCTURES	Sensitivity (str/cm ²)	CONCENTRATION (str/cm ²)	COMMENTS
FB1-121313 041333720-0001		None Detected	<2.99			Blank
P0002-CR21- WP01-01 041333720-0002	100	None Detected	<2.99	485	<1450	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR21- WP02-01 041333720-0003	100	None Detected	<2.99	485	<1450	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR21- WP03-01 041333720-0004	100	None Detected	<2.99	485	<1450	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR22- WP01-01 041333720-0005	100	None Detected	<2.99	970	<2900	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR22- WP02-01 041333720-0006	100	None Detected	<2.99	485	<1450	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR22- WP03-01 041333720-0007	100	None Detected	<2.99	970	<2900	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR23- WP01-01 041333720-0008	100	None Detected	<2.99	970	<2900	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR23- WP02-01 041333720-0009	100	Chrysotile	<2.99	970	<2900	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR23- WP03-01 041333720-0010	100	Chrysotile	53	4850	257000	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.

Analyst(s)

Dave Poitras (12)

Ted Young (9)

Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

EMSL maintains liability to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ

Initial report from 12/18/2013 16:38:13

Test Report TEMMicro-7.21.0 Printed: 12/18/2013 4:38:13 PM

1

**EMSL Analytical, Inc.**

200 Route 130 North, Cinnaminson, NJ 08077

Phone/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com>cinnaslab@EMSL.com

EMSL Order: 041333720

CustomerID: RFEW53

CustomerPO: 0084577

ProjectID: RFP 272D

Attn: **Smita Sumbaly**
Weston Solutions (King Georges Post)
1090 King Georges Post Road
Suite 201
Edison, NJ 08837

Phone: (732) 585-4400
Fax:
Received: 12/14/13 11:30 AM
Analysis Date: 12/18/2013
Collected: 12/13/2013

Project: Site #: 0029-0122, RFP #: 272D

Test Report: Asbestos Analysis of Wipe Samples Using Method ASTM 6480

SAMPLE ID	AREA SAMPLED (cm ²)	ASBESTOS TYPE	ASBESTOS STRUCTURES	Sensitivity (str/cm ²)	CONCENTRATION (str/cm ²)	COMMENTS
P0002-CR24- WP01-01 041333720-0011	100	None Detected	<2.99	485	<1450	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR24- WP02-01 041333720-0012	100	Chrysotile	8	970	7760	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR24- WP03-01 041333720-0013	100	Chrysotile	3	970	2910	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR25- WP01-01 041333720-0014	100	Chrysotile	5	1940	9700	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR25- WP02-01 041333720-0015	100	Chrysotile	9	1940	17500	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR25- WP03-01 041333720-0016	100	Chrysotile	4	970	3880	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR26- WP01-01 041333720-0017	100	Chrysotile	<2.99	485	<1450	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR26- WP02-01 041333720-0018	100	None Detected	<2.99	485	<1450	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR26- WP03-01 041333720-0019	100	None Detected	<2.99	485	<1450	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.

Analyst(s)

Dave Poitras (12)

Ted Young (9)

Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

EMSL maintains liability to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ

Initial report from 12/18/2013 16:38:13

Test Report TEMMicro-7.21.0 Printed: 12/18/2013 4:38:13 PM

Attn: **Smita Sumbaly**
Weston Solutions (King Georges Post)
1090 King Georges Post Road
Suite 201
Edison, NJ 08837

Phone: (732) 585-4400
Fax:
Received: 12/14/13 11:30 AM
Analysis Date: 12/18/2013
Collected: 12/13/2013

Project: Site #: 0029-0122, RFP #: 272D

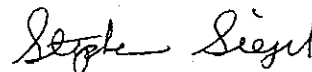
Test Report: Asbestos Analysis of Wipe Samples Using Method ASTM 6480

SAMPLE ID	AREA SAMPLED (cm ²)	ASBESTOS TYPE	ASBESTOS STRUCTURES	Sensitivity (str/cm ²)	CONCENTRATION (str/cm ²)	COMMENTS
P0002-CR28- WP01-01 041333720-0020	100	None Detected	<2.99	485	<1450	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR28- WP02-01 041333720-0021	100	None Detected	<2.99	485	<1450	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.

Analyst(s)

Dave Poitras (12)

Ted Young (9)



Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

EMSL maintains liability to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ

Initial report from 12/18/2013 16:38:13

Test Report TEMMicro-7.21.0 Printed: 12/18/2013 4:38:13 PM

THIS IS THE LAST PAGE OF THE REPORT.

3

CHAIN OF CUSTODY RECORD

Site #: 0029-0122

Contact Name: Joel Petty

Contact Phone: 732-570-4943

Cooler #: 111

Lab: EMSL

Lab Phone: 858-303-2538

Special Instructions: 24 Hour TAT Preliminary Data, Email results to Carlos.Huertas@WestonSolutions.com, Joel.Petty@WestonSolutions.com, and S.Sumbaly@WestonSolutions.com	SAMPLES TRANSFERRED FROM	0
	CHAIN OF CUSTODY #	

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all sample containers	Juel Pety RST	12/13/13 1500			
			DyMB-fx-1130A	12.14.13	

42

USEPA

DateShipped: 12/13/2013
RFP# 272D
PO# 0084577

CHAIN OF CUSTODY RECORD

Site #: 0029 - 0122
Contact Name: Joel Petty
Contact Phone: 732-570-4943

No: 2-121313-112434-0007

Cooler #: 1
Lab: EMSL
Lab Phone: 858-303-2538

041333720

[illegible]

Special instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joel Pettit@WestonSolutions.com, and S.Sumbaly@WestonSolutions.com

**SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #**

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all evidence	Jed Petty RST2	12/13/13 1500			



EMSL ANALYTICAL, INC.
200 RT. 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 786-0235

December 20, 2013

Smita Sumbaly
Weston Solutions
1090 King Georges Post Road
Suite 201
Edison, NJ 08837
732-585-4400

Re: Narrative TEM ASTM 6480 041333718; RFP #: 272D, Site #:0029-0122

Dear Smita:

On December 14, 2013, EMSL Analytical, Inc. in Cinnaminson, NJ received five (5) wipe samples via overnight carrier from Weston Solutions for asbestos content analysis via TEM ASTM 6480. The samples were logged in following normal lab procedures. Samples were received under Chain of Custody and in good condition.

TEM ASTM D6480

Samples are prepared by rinsing the sampling wipe and sample bag into a clean 500 mL specimen container. The specimen cup is filled with 400 mL of deionized water and the pH is adjusted to 3-4 with acetic acid. Once the desired pH is achieved the final volume is brought up to 500 mL. Multiple dilutions of each sample are filtered through a 47 mm MCE filtration apparatus. The filter is dried in a petri dish. A portion of the filter is prepared through a direct transfer technique. This technique requires the collapse of a filter wedge onto a microscope slide with hot acetone vapor. The collapsed filter is then etched to remove the top 5% of the filter and a thin layer of carbon deposited on the filter. The carbon coated filter is placed on top of a copper mesh TEM Grid and the filter polymer is wicked away in an acetone bath.

Samples were analyzed by Transmission Electron Microscopy (TEM) via ASTM D6480-05. All data was reported as structures per square centimeter. The target analytical sensitivity for these dust samples was 260 S/cm². Due to excessive particulate the analytical sensitivity of 260 str/cm² as required by the method was not reached. An aspect ratio of $\geq 5:1$ was applied.

Results

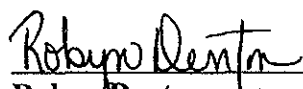
All samples associated with this EMSL order ID were analyzed via transmission electron microscopy (TEM) using procedures from TEM ASTM 6480. Analysis was performed on JEOL 100 CX II & JEOL 1200 EX microscopes at approximately 19,000X. Chrysotile was detected in all field samples.

Quality Control Performed

The Quality Control (QC) and equipment calibration was performed in compliance with EMSL's Quality Assurance Manual. One (1) blank and one (1) inter-analyst QC samples were analyzed. All QC results presented within this package were found to be concordant.



I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. In addition, I certify, that to the best of my knowledge and belief, the data as reported are true and accurate. Release of the data contained in this data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.



Robyn Denton

*Asbestos Special Projects Manager
EMSL Cinnaminson, NJ*



2. Tabulated Sample Results

**EMSL Analytical, Inc.**

200 Route 130 North, Cinnaminson, NJ 08077

Phone/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com>cinnaslab@EMSL.com

EMSL Order: 041333718

CustomerID: RFWE53

CustomerPO: 0084577

ProjectID: RFP 272D

Attn: **Smita Sumbaly**
Weston Solutions (King Georges Post)
1090 King Georges Post Road
Suite 201
Edison, NJ 08837

Phone: (732) 585-4400
Fax:
Received: 12/14/13 11:30 AM
Analysis Date: 12/18/2013
Collected: 12/13/2013

Project: Site #: 0029-0122, RFP #: 272D

Test Report: Asbestos Analysis of Wipe Samples Using Method ASTM 6480

SAMPLE ID	AREA SAMPLED (cm ²)	ASBESTOS TYPE	ASBESTOS STRUCTURES	Sensitivity (str/cm ²)	CONCENTRATION (str/cm ²)	COMMENTS
FB2-121313 041333718-0001		None Detected	<2.99			Blank
P0002-CR28- WP03-01 041333718-0002	100	Chrysotile	10	485	4850	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR29- WP01-01 041333718-0003	100	Chrysotile	10	1940	19400	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR29- WP02-01 041333718-0004	100	Chrysotile	8	485	3880	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.
P0002-CR29- WP03-01 041333718-0005	100	Chrysotile	3	485	1460	Due to excessive particulate the analytical sensitivity of 260 str/cm ² as required by the method was not reached.

Analyst(s)

Debbie Little (4)

Ted Young (1)

Stephen Siegel, CIH, Laboratory Manager
or other approved signatory

EMSL maintains liability to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ

Initial report from 12/18/2013 14:09:35

Test Report TEMMicro-7.21.0 Printed: 12/18/2013 2:09:35 PM

THIS IS THE LAST PAGE OF THE REPORT.

1

USEPA

DateShipped: 12/13/2013

RF# 272D

PO# 0084577

CHAIN OF CUSTODY RECORD

Site #: 0029 - 0122

Contact Name: Joal Patty

Contact Phone: 732-570-4943

No: 2-121313-112542-0008

Cooler #: 1

Lab: EMSL

Lab Phone: 858-303-2538

[illegible]

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Special Instructions: 24 Hour TAT Preliminary Data. Email results to Carlos.Huertas@WestonSolutions.com, Joei.Petv@WestonSolutions.com, and S.Sumbaly@WestonSolutions.com

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
all samples all analyses	J. C. Kelly RST	12/13/13 1500			
			DWB-A-1130A	12.14.13	



7. NVLAP/AIHA Certifications



AIHA

Laboratory Accreditation
Programs, LLC

AIHA Laboratory Accreditation Programs, LLC

acknowledges that

EMSL Analytical, Inc.

200 Route 130 North, Cinnaminson, NJ 08077

Laboratory ID: 100194

along with all premises from which key activities are performed, as listed above, has fulfilled the requirements of the AIHA Laboratory Accreditation Programs (AIHA-LAP), LLC accreditation to the ISO/IEC 17025:2005 international standard, *General Requirements for the Competence of Testing and Calibration Laboratories* in the following:

LABORATORY ACCREDITATION PROGRAMS

- ☒ INDUSTRIAL HYGIENE
- ☒ ENVIRONMENTAL LEAD
- ☒ ENVIRONMENTAL MICROBIOLOGY
- ☐ FOOD

Accreditation Expires: 07/01/2014

Accreditation Expires: 07/01/2014

Accreditation Expires: 07/01/2014

Accreditation Expires:

Specific Field(s) of Testing (FoT)/Method(s) within each Accreditation Program for which the above named laboratory maintains accreditation is outlined on the attached Scope of Accreditation. Continued accreditation is contingent upon successful on-going compliance with ISO/IEC 17025:2005 and AIHA-LAP, LLC requirements. This certificate is not valid without the attached Scope of Accreditation. Please review the AIHA-LAP, LLC website (www.aihaaccreditedlabs.org) for the most current Scope.

S. D. Allen Iske, PhD, CIH, CSP

S. D. Allen Iske, PhD, CIH, CSP
Chairperson, Analytical Accreditation Board

Cheryl O. Morton

Cheryl O. Morton
Managing Director, AIHA Laboratory Accreditation Programs, LLC

Revision 12: 03/29/2012

Date Issued: 07/31/2012



AIHA Laboratory Accreditation Programs, LLC

SCOPE OF ACCREDITATION

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077

Laboratory ID: **100194**
Issue Date: 07/31/2012

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or revocation. A complete listing of currently accredited Industrial Hygiene laboratories is available on the AIHA-LAP, LLC website at: <http://www.aihaaccreditedlabs.org>

Industrial Hygiene Laboratory Accreditation Program (IHLAP)

Initial Accreditation Date: 02/01/1989

IHLAP Scope Category	Field of Testing (FoT)	Technology sub-type/ Detector	Published Reference Method/Title of In-house Method	Method Description or Analyte (for internal methods only)
Chromatography Core	Gas Chromatography	GC/ FID	NIOSH 1003	
			NIOSH 1005	
			NIOSH 1400	
			NIOSH 1500	
			NIOSH 1550	
			NIOSH 1603	
			NIOSH 2000	
		GC/ECD	NIOSH 5502	
			NIOSH 5503	
			NIOSH 5510	
		GC/NPD	OSHA 1010	
			NIOSH 2551	
	GC/MS		EPA TO-15	
	Gas Chromatography (Diffusive Samplers)		NIOSH 1501	
	Ion Chromatography (IC)		NIOSH 6004	
			NIOSH 6011	
			NIOSH 7903	
			OSHA ID-214	
			OSHA ID-215	
	Liquid Chromatography	HPLC/FL	NIOSH 5506	
		HPLC/UV	NIOSH 2016	

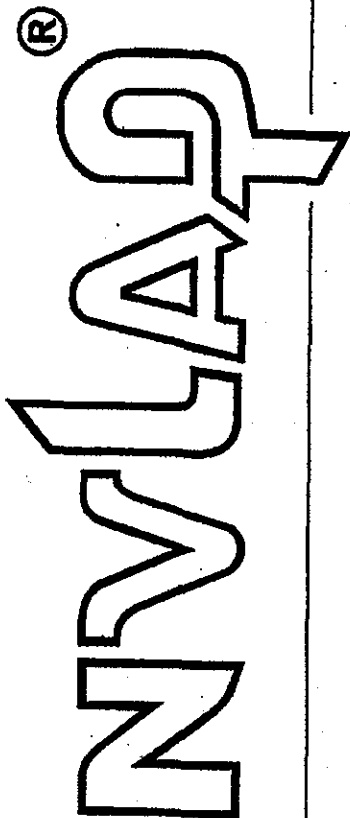


IHLAP Scope Category	Field of Testing (FoT)	Technology sub-type/ Detector	Published Reference Method/Title of In-house Method	Method Description or Analyte (for internal methods only)
Spectrometry Core	Atomic Absorption	CVAA	NIOSH 6009	
			OSHA ID-145	SOP LM-015
			OSHA ID-145	SOP LM-013
		FAA	NIOSH 7082	
		GFAA	NIOSH 7105	
	Inductively-Coupled Plasma	ICP/MS	NIOSH 7300 Modified	
		ICP/AES	NIOSH 7300	
	X-ray Diffraction (XRD)		NIOSH 7500	
			OSHA ID-142	
Asbestos/Fiber Microscopy Core	UV/VIS (Colorimetric)		NIOSH 6010	
	Polarized Light Microscopy (PLM)		EPA 600/R-93/116	
	Phase Contrast Microscopy (PCM)		NIOSH 7400	
	Transmission Electron Microscopy (TEM)		EPA AHERA - 40 CFR Part 763	
			NIOSH 7402	
Miscellaneous Core	Gravimetric		NIOSH 0500	
			NIOSH 0600	
			NIOSH 5524	
	Thermo-optical Analysis (TOA)		NIOSH 5040	

The laboratory participates in the following AIHA-LAP, LLC-approved proficiency testing programs:

- | | |
|--|--|
| <ul style="list-style-type: none"> ✓ AIHA-PAT Programs, LLC IHPAT Metals ✓ AIHA-PAT Programs, LLC IHPAT Organic Solvents ✓ AIHA-PAT Programs, LLC IHPAT Silica ✓ AIHA-PAT Programs, LLC IHPAT Diffusive Sampler (3M) ☐ AIHA-PAT Programs, LLC IHPAT Diffusive Sampler (SKC) ☐ AIHA-PAT Programs, LLC IHPAT Diffusive Sampler (AT) ✓ AIHA-PAT Programs, LLC IHPAT Asbestos ☐ AIHA-PAT Programs, LLC Bulk Asbestos (BAPAT) ☐ AIHA-PAT Programs, LLC Beryllium (BePAT) ✓ HSE Workplace Analytical Scheme for Proficiency (WASP) (Formaldehyde) ☐ HSE Workplace Analytical Scheme for Proficiency (WASP) (Thermal Desorption Tubes) | <ul style="list-style-type: none"> ☐ Pharmaceutical Round Robin ☐ Compressed/Breathing Air Round Robin ✓ National Voluntary Laboratory Accreditation Program (NVLAP - determined at the time of site assessment) ☐ New York State Department of Health (NYS DOH - PCM and TEM) ✓ ERA Air and Emissions standards for indoor air quality ☐ Institut für Arbeitsschutz der Deutschen Gesetzlichen Unfallversicherung (IFA, formerly BGIA) ☐ Institut de Recherche Robert-Sauvé en Santé et en Sécurité du Travail (IRSST) |
|--|--|

United States Department of Commerce
National Institute of Standards and Technology



Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 101048-0

EMSL Analytical, Inc.
Cinnaminson, NJ

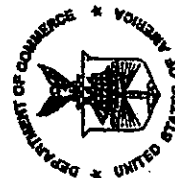
is accredited by the National Voluntary Laboratory Accreditation Program for specific services,
listed on the Scope of Accreditation, for:

AIRBORNE ASBESTOS FIBER ANALYSIS

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated January 2009).

2013-07-01 through 2014-06-30

Effective dates



W. D. M. L. D.

For the National Institute of Standards and Technology



**National Voluntary
Laboratory Accreditation Program**



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
Mr. Stephen Siegel, CIH
Phone: 800-220-3675 Fax: 856-786-5973
E-Mail: ssiegel@emsl.com
URL: <http://www.emsl.com>

AIRBORNE ASBESTOS FIBER ANALYSIS (TEM)

NVLAP LAB CODE 101048-0

NVLAP Code Designation / Description

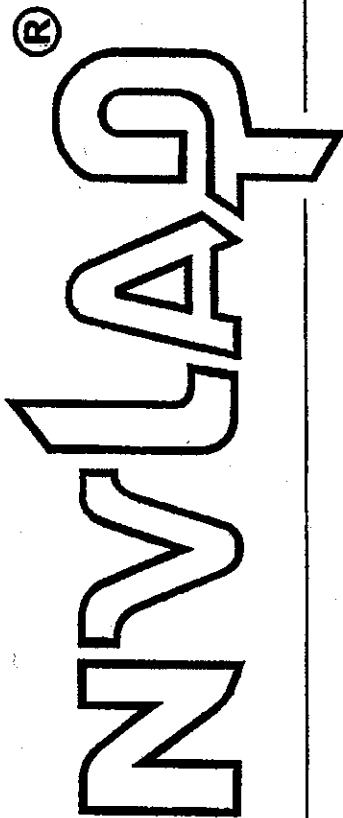
18/A02 U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR, Part 763, Subpart E, Appendix A.

2013-07-01 through 2014-06-30

Effective dates

For the National Institute of Standards and Technology

United States Department of Commerce
National Institute of Standards and Technology



Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 101048-0

EMSL Analytical, Inc.
Cinnaminson, NJ

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services,
listed on the Scope of Accreditation, for:*

BULK ASBESTOS FIBER ANALYSIS

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality
management system (refer to joint ISO-ILAC-IAF Communiqué dated January 2009).*

2013-07-01 through 2014-06-30

Effective dates



W. D. M. L.

For the National Institute of Standards and Technology



**National Voluntary
Laboratory Accreditation Program**



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
Mr. Stephen Siegel, CIH
Phone: 800-220-3675 Fax: 856-786-5973
E-Mail: ssiegel@emsl.com
URL: <http://www.emsl.com>

BULK ASBESTOS FIBER ANALYSIS (PLM)

NVLAP LAB CODE 101048-0

NVLAP Code Designation / Description

18/A01	EPA 600/M4-82-020: Interim Method for the Determination of Asbestos in Bulk Insulation Samples
18/A03	EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

2013-07-01 through 2014-06-30

Effective dates

For the National Institute of Standards and Technology



8. Customer Correspondence